

REMARKS/ARGUMENTS

The Office Action mailed May 24, 2004 has been carefully considered. Reconsideration in view of the following remarks is respectfully requested.

Claim Status and Amendment to the Claims

Claims 59-150 are now pending.

Claims 1-58 have been canceled, without prejudice or disclaimer of the subject matter contained therein.

Claims 59, 69, 77, 87, 95, 109, 123, and 137 have been amended to further particularly point out and distinctly claim subject matter regarded as the invention. Support for changes to claims 59, 77, 95, and 123 may be found in the original specification at page 6 lines 14-30, page 14 line 33 to page 15 line 1, page 16 line 13 to page 20 line 7, and FIGS. 5, 6A, 6B, 7A, 7B, 8A and 8B. Support for claims 59, 77, 95, and 123 is also provided in original claims 6, 19, 33, 49, and 58. Support for changes to claims 69, 87, 109, and 137 is provided in the original specification at page 6 line 31 to page 7 line 2, page 15 lines 2-4, page 20 lines 8-27, and FIGS. 10A and 10B. Support for claims 69, 87, 109, and 137 is also provided in original claims 14, 37, and 53. The text of claims 60-68, 70-76, 78-86, 88-94, 96-108, 110-122, 124-136, and 138-150 is unchanged, but their meaning is changed because they depend from amended claims.

The Amendment also contains minor changes of a clerical nature. No “new matter” has been added by the Amendment.

The 35 U.S.C. § 102(e) Rejection

Claims 59-61, 63-69, 71-79, 81-87, 89-95, 97, 99-101, 103-115, 117-129, 131-143, and 145-150 stand rejected under 35 U.S.C. §102(e) as being allegedly anticipated by Wilkinson et al.¹, among which claims 59, 69, 77, 87, 95, 109, 123, and 137 are independent claims.² This rejection is respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.³ The identical invention must be shown in as complete detail as is contained in the claim.⁴

Claim 59 as amended recites:

An application software program, comprising:
an object oriented, verifiable, type safe and pointer safe sequence of instructions residing on a computer readable medium, said instructions comprising operation codes and operands, said program operable to be loaded to and executed by a resource constrained device, said instructions previously converted from at least one class file, said conversion transforming at least one reference of at least one of said instructions to a constant pool, to inline data inlined directly in at least one operand or opcode of said at least one of in said instructions.

¹ USP 6,308,317.

² Office Action dated May 24, 2004, ¶ 3.

³ *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987).

⁴ *Richardson v. Suzuki Motor Co.*, 869 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). See also, M.P.E.P. §2131.

The Examiner states:

As per claim 59, Wilkinson discloses an application software program comprising an object-oriented, verifiable, type-safe and pointer-safe sequence of instructions, said instructions comprising codes and operands (e.g. Fig. 5, 12, 18 - Note: stack parameters checking is equivalent to type and reference safe checking prior to instructions execution) residing on a computer-readable medium (Loadable application A, B, Fig. 14);

wherein the program can be loaded to and executed (Loading and Execution control 120, Fig. 14) by a Integrated Circuit Card, i.e. resource-constrained device as claimed (hereinafter RCD),

said instructions previously converted from one class file (e.g. col. 10, lines 30-47; Fig. 5,6);

said conversion transforming one reference to a constant pool to inline data in said instructions (e.g. V ref 91, data FFF3 - Fig. 9)

that is based on a processor architecture of fewer than 32 bits (Fig. 1, 13; col. 7, lines 43-56).⁵

The Examiner also states:

... the claim does not specify how exactly such 'converted from ... one class file' is, nor does it describe such 'transforming ... to inline data . . .' is specifically so to distinguish it from what Wilkinson does to the reference to a constant pool ...⁶

The Wilkinson et al. reference discloses updating operands to byte codes that reference entries in a first constant pool to reflect their new location in a second constant pool. The modified byte codes disclosed by Wilkinson et al. still reference a constant pool, whereas in one aspect of the present invention, the conversion transforms at least one reference of *at least one of the instructions* to a constant pool, to data *inlined directly in at least one operand or opcode* of the at least one of the instructions. This is not disclosed by Wilkinson et al. Inlining directly in an opcode or operand in this way reduces or eliminates the need to reference the constant pool

⁵ Office Action ¶ 3.

⁶ Office Action ¶ 6.

during program execution, thus reducing the amount of information stored in a CAP file and increasing execution speed. With this Amendment, claim 59 has been amended to make this distinction more clear. Thus, the 35 U.S.C. § 102 rejection of claim 59 is unsupported by the art and must be withdrawn.

Claims 77, 95, and 123

Claims 77, 95, and 123 also include substantially the same distinctive features as claim 59. Claim 59 being allowable, claims 77, 95, and 123 must also be allowable for at least the same reasons.

Claim 69

Claim 69 as amended recites:

An application software program, comprising:
an object oriented, verifiable, type safe and pointer safe sequence of instructions residing
on a computer readable medium, said instructions comprising operation codes and
operands, said program operable to be loaded to and executed by a resource
constrained device, said instructions previously converted from at least one class file,
said instructions comprising at least one composite instruction for performing an
operation on a current object, execution of said at least one composite instruction
being functionally equivalent to sequential execution of two or more other
instructions.

The Examiner states:

...Wilkinson further discloses that said converted instructions comprise at least one composite instruction for performing an operation on a current object (ILOAD 0, ILOAD-1 - Fig. 7; ILOAD B - Fig. 11 Note: instructions embedding operands and data which can be decomposed into separate parts of the instructions to be executed are equivalent to composite instructions).⁷

In support of the contention, the Examiner refers to Figure 7 of Wilkinson et al. The text accompanying FIG. 7 discloses:

Typically, the translated byte codes are not interpreted in the Card JVM 16 but are supported by converting the byte codes into equivalent byte codes that can be interpreted by the Card JVM 16 (see FIG. 7). The byte codes 70 may be replaced with another semantically equivalent but different byte codes 72. *This generally entails the translation of short single specific byte codes such as ILOAD_0 into their more general versions.* For example, ILOAD_0 may be replaced by byte code ILOAD with an argument 0.⁸

Thus, the Wilkinson et al. reference discloses translating a single short specific byte code into a more general version. In the example shown in Wilkinson et al., a *single* “ILOAD_0” is translated into a *single* generalized “ILOAD” instruction with an argument having a value of zero, whereas in one aspect of the present invention, execution of a *single* composite instruction is functionally equivalent to sequential execution of *two or more* other instructions. Furthermore, a composite instruction may be included in the sequence of instructions in lieu of the two or more other instructions that are functionally equivalent to the composite instruction.

⁷ Office Action ¶ 3.

⁸ Wilkinson et al. at col. 10 lines 35-44. (emphasis added)

This is not disclosed by Wilkinson et al. With this Amendment, claim 69 has been amended to make this distinction more clear. Thus, the 35 U.S.C. § 102 rejection of claim 69 is unsupported by the art and must be withdrawn.

Claims 87, 109, and 137

Claims 87, 109, and 137 also include substantially the same distinctive features as claim 69. Claim 69 being allowable, claims 87, 109, and 137 must also be allowable for at least the same reasons.

Dependent Claims 60-61, 63-68, 71-76, 78-79, 81-86, 89-94, 97, 99-101, 103-108, 110-115, 117-122, 124-129, 131-136, 138-143, and 145-150

Claims 60-61 and 63-68 depend from claim 59. Claims 71-76 depend from claim 69. Claims 78-79 and 81-86 depend from claim 77. Claims 89-94 depend from claim 87. Claims 97, 99-101, and 103-108 depend from claim 95. Claims 110-115 and 117-122 depend from claim 109. Claims 124-129 and 131-136 depend from claim 123. Claims 138-143 and 145-150 depend from claim 137. Claims 59, 69, 77, 87, 95, 109, 123, and 137 being allowable, claims 60-61, 63-68, 71-76, 78-79, 81-86, 89-94, 97, 99-101, 103-108, 110-115, 117-122, 124-129, 131-136, 138-143, and 145-150 must also be allowable for at least the same reasons.

The 35 U.S.C. § 103 Rejection

Claims 62, 70, 80, 88, 96, 98, 102, 116, 130, and 144 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Wilkinson et al., among which all are dependent claims. This rejection is respectfully traversed.

According to the Manual of Patent Examining Procedure (M.P.E.P.),

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.⁹

Regarding claims 62, 70, 80, 88, 102, 116, 130, and 144, the Office Action contends that the elements of the presently claimed invention are disclosed in Wilkinson et al. except that Wilkinson et al. does not teach the resource-constrained device is a 16-bit processor architecture for executing the instructions.¹⁰ The Office Action further contends that one of ordinary skill in the art at the time of the invention would recognize the need for implementing an architecture so that the instruction architecture could handle either 8, 16 or 32 bit instruction architecture as suggested by Wilkinson et al.¹¹ With respect to claims 96 and 98, the Office Action contends that the elements of the presently claimed invention are disclosed in Wilkinson et al. except that Wilkinson et al. does not teach accessing the software program to download onto the resource-constrained device from a network. The Office Action further contends that it would have been obvious for one of ordinary skill in the art at the time the invention was made to add to Wilkinson et al.'s system the accessing of application programs over the Internet or network because this would improve the availability of the program to load the resource-constrained device while enhancing the resource usage efficiency and for not overburdening the storage of

⁹ M.P.E.P § 2143.

¹⁰ Office Action ¶ 5.

¹¹ Office Action ¶ 5.

the host machine and the resource-constrained device connected to it. The Applicants respectfully disagree for the reasons set forth below.

Claims 62, 70, 80, 88, 102, 116, 130, and 144 depend from independent claims 59, 69, 77, 87, 95, 109, 123, and 137, respectively. As mentioned above with respect to the 35 U.S.C. § 102 rejection, Wilkinson et al. does not teach or suggest all claim limitations. Claims 59, 69, 77, 87, 95, 109, 123, and 137 being allowable, claims 62, 70, 80, 88, 102, 116, 130, and 144 must also be allowable for at least the same reasons. Thus, the 35 U.S.C. § 103 rejection of claims 62, 70, 80, 88, 102, 116, 130, and 144 is unsupported by the art and must be withdrawn.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Request for Allowance

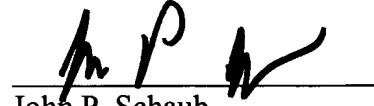
It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-1698.

Respectfully submitted,
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